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ABSTRACT

This paper traces the history of 11 prominent learning style theorists from the 1970s to the present. Several theorists focused on the student's cognitive processing style. Manuel Ramirez attributed Mexican-American students' tendency toward field sensitivity to their socialization. Charles Letteri classified learners as analytic, global, or combination processors. Anthony Gregorc identified four styles of cognitive processing which combined concrete and abstract spatial and sequential and random temporal components. Ronald R. Schmeck conceptualized cognitive style in a developmental fashion, proceeding from global to analytic. David Kolb identified four learning modes, concrete experience, reflective observation, abstract conceptualization, and active experimentation; and for learning styles, accommodation, assimilation, converging, and diverging. Joseph Hill defined learning style as the way an individual searches for meaning and considered cognitive processes, perceptual modalities, and sociological elements. Harry Reinert focused on students' reactions to an auditory stimulus to enhance learning. David Hunt examined sociological and emotional components of learning style, such as need for structure and peer- versus adult-orientation. Kenneth Dunn and Rita Dunn developed a comprehensive model dealing with environmental, emotional, sociological, physical, and psychological learning style elements which provides information directly related to teaching strategies. Bernice McCarthy developed a lesson plan model which provides a sequence of instruction to move students from concrete experience to reflective observation to abstract conceptualization to active experimentation. The models complement and build on one another, but there is still considerable debate on the issue of matching the learner's style or altering it. (Contains 31 references.) (KDFB)

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THE SEARCH FOR STYLE:

It All Depends On Where You Look

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ABSTRACT

This article traces the history of eleven prominent learning-style theorists: Ramirez, Letteri, Gregorc, Schmeck, Kolb, Hill, Reinert, Hunt, Dunn & Dunn, Keefe, and McCarthy. From the 1970s until the present, the search for the perfect style is discussed in terms of each researcher looking for the key to how learning occurs.

THE SEARCH FOR STYLE:

It All Depends On Where You Look

Are all discoveries a matter of finding something that is hidden? Have you ever misplaced your keys? After a thorough search under chair cushions, behind dressers, and in every nook and cranny, someone remarks, "Whose keys are these in the middle of the dining room table?" Perhaps, many discoveries are made, not by finding something that is hidden, but by looking where no one has looked. One of the "keys" to discovery may be a matter of looking in the right place.

PROCESSING STYLE

In the mid 1970s, Manuel Ramirez was looking for a "key." He wanted to find the reason that many of the Mexican-American children of the Southwestern United States were not achieving as well as other students. Ramirez's search led him to look where no one had looked before. He looked into the minds and culture of these students and found "keys" that no one had yet discovered. He found that these young students exhibited more field sensitive than field independent characteristics and attributed this to their socialization. Cognitive style was believed to be responsive to "cultural determinants." As such, Ramirez believed that style was not fixed but could be altered. However, he was concerned that a superficial understanding of his theory of "cultural determinants" would lead to stereotyping (DeBello, 1990). Further research has shown that there is considerable diversity of learning styles in all cultures (Dunn & Griggs, 1996). When we read that people of a culture exhibit one particular style more than another style, we can

be misled into thinking it refers to a majority of the population. However, because many elements of style are not dichotomous, the predominant element may represent far less than half of the population.

Many of the early learning-style researchers focused on cognitive processing, as Ramirez did. In 1980, Charles Letteri identified learners as belonging to one of three categories. A Type 1 learner is an analytic processor who is able to see details sharply and is tolerant of ambiguity. These characteristics enable Type 1 learners to be very successful in school. Type 3 learners are global processors who are able to categorize only broadly and tend to be intolerant of ambiguity. Letteri believes that these characteristics prevent Type 3 learners from achieving academic success. Type 2 learners demonstrate some qualities of Types 1 and 3 and experience moderate success in school. Letteri firmly believes that the style of Type 3 learners should be deliberately altered to enable these students to achieve to their potential.

Anthony Gregorc began his study of style in 1968 while he was principal of the Laboratory School at the University of Illinois in Urbana-Champaign (Gregorc, 1985). While there, he noticed that some academically gifted students were "underachieving." In his search for an explanation he found two different types of students. Some students preferred teachers who were business-like and presented lessons in an orderly, step-by-step manner. Others liked instructors who personalized lessons and did not focus exclusively on the text. From this beginning, Gregorc created his model, which describes processing style in terms of spatial/temporal components. The spatial components are concrete and abstract. The temporal components are sequential and random. Style consists of any combination of the spatial/temporal components providing four options.

concrete/sequential, concrete/random, abstract/concrete, and abstract/random. Gregorc believes that the learner's style should be matched to the selected learning strategy but that learners must also learn to adapt their style to fit the environment.

The work of Ronald R. Schmeck followed on the heels of Ramirez, Letteri, and Gregorc. Schmeck (1988) believed that one's cognitive style could be modified to fit the situation. He defined style as "any pattern we see in a person's way of accomplishing a particular type of task" (Schmeck, 1988, p. xi). However, there is still a "...stylistic element that is often very resistant to change" (Schmeck, 1988, p. xiii). Schmeck (1988) saw cognitive style as developmental, proceeding from global to analytic. Eventually, many self-actualizing individuals are able to develop an integration of the global and analytic modes (McCarthy & Schmeck, 1988, p. 150). The predominantly analytic person has the capability to see surface differences whereas the global individual looks deeper into relationships. Nevertheless, analytic skills are still needed to examine, evaluate, and comprehend relationships at a complex level. Therefore, according to Schmeck (1988), it is the self-actualized individual using both styles who sees deeper and with greater understanding. He believes that we should teach strategies to apply to different learning tasks, to know whether to approach a learning task analytically or globally. Thus, in predominantly global individuals, we should encourage analytic skills and, in predominantly analytic individuals, we should encourage global skills. Schmeck (1988, p. 342) perceives that versatility in cognitive functioning is the goal of education.

In 1976, David Kolb, a cognitive theorist, initially developed what he called a Learning Style Inventory to describe the ways people learn and how they deal with ideas and situations (Philbin, Meier, Huffman, & Bovarie, 1995). This was a self-report nine-

item description questionnaire in which four words were rank ordered to best describe one's learning style. One word in each item was to correspond to one of the four learning modes (Kolb, 1984):

> CE: concrete experience (feeling, as opposed to thinking). A focus on being involved in experiences and dealing with immediate human situations in a personal way. These people are good at relating to others, are intuitive decision makers.
>
> RO: reflective observation (watching, observing, understanding, as opposed to practical application). These people like to look at things from different perspectives and appreciate different points of view.
>
> AC: abstract conceptualization (thinking as opposed to feeling) The use of logic, ideas, and concepts. Building general theories as opposed to intuitively understanding unique, specific areas. A scientific vs. an artistic approach to problems.
>
> AE: active experimentation (doing). Actively influencing people and changing situations. Practical applications as opposed to reflective understanding. Doing as opposed to observing.

Kolb designed a revised inventory designed to improve the original instruments' internal consistency and construct validity (Atkinson, 1988, 1989) then in 1984. He theorized that learning ability is a four-stage process (Figure 1) which he graphed out on a coordinated grid that demonstrated bipolar dimensions of doing (active experimentation) versus watching (reflective observation) on the x-coordinate, and feeling (concrete experience) versus thinking (abstract conceptualization) on the y-coordinate (Kolb, 1984; Philbin et al., 1995). Depending on one's inclination along the coordinates, a combination of different abilities would identify four learning styles: the **accommodator**, whose abilities fall between the areas of concrete experience and active experimentation (feeling and doing); the **assimilator**, whose dominant learning abilities fall between abstract conceptualization and reflective observation (thinking and watching); the **converger**, who

demonstrates learning best by a combination of abstract conceptualization and active experimentation (thinking and doing), and the **diverger**, who is best at concrete experience and reflective observation (feeling and watching) (Cornwell & Manfredo, 1994, p. 317; Yuen & Lee, 1994b).

Kolb's Experimental Learning Model

(adapted from Hayes and Allinson, 1993, p. 66)

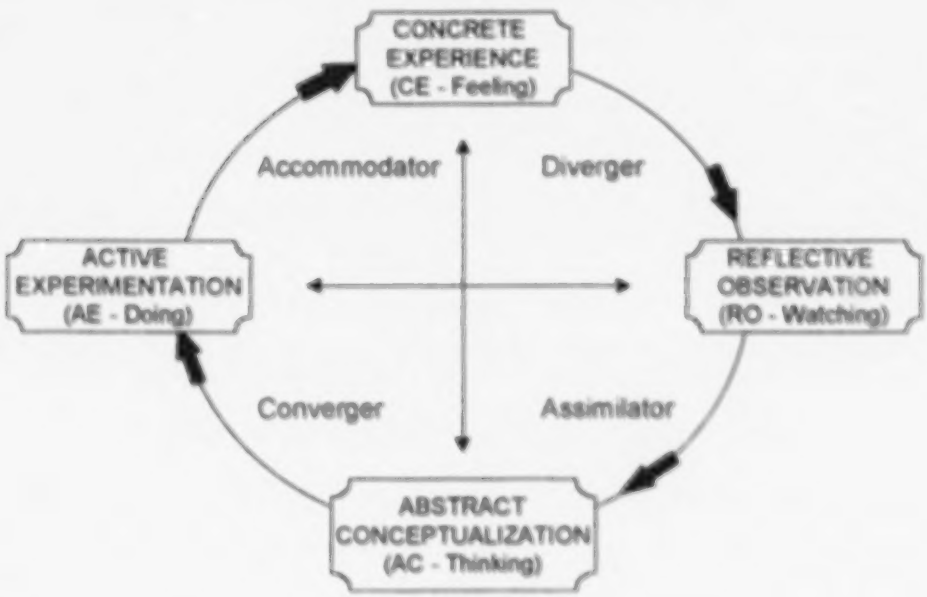

Figure 1

Kolb's inventory was used to predict individual learning-style differences among adults in business, management and professional jobs. Kolb described learning as a cyclic process involving all four elements of thinking, doing, watching and feeling, although the levels at each cycle varied among individuals (Wilson, 1986). He also theorized that

academic performance depended on a match between the student's learning style and the demands of the academic discipline (Hayes & Allinson, 1993). Research has shown, however, that the concurrent and predictive validity of Kolb's learning style types, as well as the reliability of the instrument are still under scrutiny (Allinson & Hayes, 1990; Atkinson, 1988, 1989; Cornwell & Manfredo, 1994; Green, Snell, & Parimanath, 1990; Hayes & Allinson, 1993; Newby, 1994).

OTHER PLACES TO LOOK

While many discoveries were made by looking at processing style, others looked somewhere else. What part did perception play in influencing learning? Were there other elements peculiar to the learner that influenced his/her achievement? Were there sociological, environmental, emotional, or other factors that facilitated or inhibited learning?

In 1976, Joseph Hill searched for answers to learning-style components by looking in places others had ignored. Hill defined learning style as the way in which an individual searched for meaning. As many of the early researchers, he investigated cognitive processes. The major elements of his Cognitive Style Model were processing of theoretical and qualitative symbols, modalities of inference, and cultural determinants (DeBello, 1990). But Hill also considered the perceptual modalities as well as sociological elements. Hill's instrument, the Cognitive Style Interest Inventory, was complex and did not achieve reliability or validity according to Curry (1987).

At the same time Hill was looking into the cognitive styles of college freshmen at Oakland Community College in Michigan, Harry Reinert (1976) was teaching high school

German in the state of Washington. Reinert attempted to discover the learning styles of his high school students by their reactions to an auditory stimulus. The instrument he developed was called the Edmonds Learning Style Identification Exercise (ELSIE) which was geared primarily to the identification of perceptual modality. Those modalities were visualization, written words, sound, and activity. Reinert (1976) reported that learning was enhanced when material was introduced initially through each student's perceptual strength.

Another researcher, David Hunt (1987) looked at sociological and emotional components. After completing his undergraduate studies, Hunt was working as an intern for a social services agency. Part of his internship involved placing youngsters in either foster homes or an institution. In trying to assess in which placement children would prosper, Hunt's tentative assumption was that those who were more likely to be adult-oriented in terms of social approval would not prosper in an institutional setting but, rather, in foster homes. For those who were more peer-oriented, the institutional setting would be more appropriate (Hunt, 1987). He later devised his Paragraph Completion Method to assess individuals' need for structure and devised instructional strategies to accommodate this emotional variable. Hunt described the need for structure in terms of three conceptual levels: moving from those who are concrete and impulsive and have poor tolerance for frustration to those who are dependent upon rules and authority and, finally, to those who are independent and need alternatives.

SEVERAL KEYS IN SEVERAL PLACES

One of the most comprehensive and multidimensional learning-style models was developed by Kenneth and Rita Dunn between 1967 and 1972. Their model is comprehensive because it deals with five strands of learning-style elements: environmental, emotional, sociological, physical, and psychological (Figure 2). It is multidimensional because, within each strand, several elements are identified.

DUNN AND DUNN LEARNING STYLES MODEL

(Dunn and Dunn, 1993, p.4.)

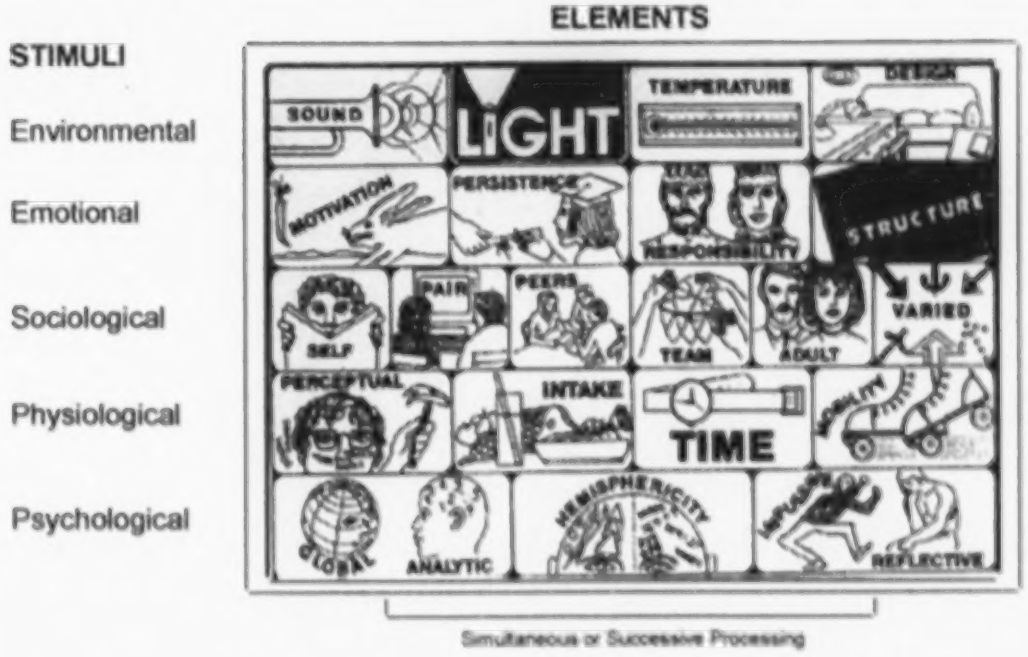

Figure 2

The Dunn and Dunn Model is also one of the few that provides information that directly relates to teaching strategies in the classroom. According to Curry (1987), the

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Dunn, Dunn, and Price Learning Style Inventory (LSI), which identifies elements of theDunn and Dunn model, has one of the highest reliability and validity ratings.

In 1979, St. John's University in New York joined with the National Association of Secondary Principals (NASSP) to create a National Learning Styles Network. This led to James Keefe of NASSP convening a task force in 1982 to examine then current learning style models and instruments. After four years, the group adopted Letteri's "General Operations Model" (1982) to relate cognitive learning style and information processing theory. Learning style was defined as the gestalt of cognitive, affective, and environmental elements. When it came to the decision of whether to match alter the students' styles, Keefe stated, "In general, then, you augment the cognitive and adapt the affective and psychological" (Keefe, 1991, p. 3).

After 22 years of teaching all levels from kindergarten to college, Bernice McCarthy pursued a goal of devising a teaching model that could be simply and efficiently used. McCarthy convened a conference in 1979, which included David Kolb and Anthony Gregorc among other renowned educators and social scientists. This conference and further study led to the development of the 4MAT System, which included research from many fields: learning styles, right and left brain dominance, creativity, effective management, art, and movement/dance. McCarthy's system is based mostly on Kolb's two dimensions of perceiving and processing. She classified learners into four categories. Type One learners were called "imaginative learners" who perceive information concretely and process it reflectively. Type Two were "analytic learners." They perceive information abstractly and process it reflectively. Learners who perceive information abstractly and process it actively comprised the Type Three group and were called "common sense

learners." "Dynamic Learners" made up the Type Four learners who perceive information concretely and process it actively. Following Kolb's organic sequence of learning, McCarthy's model (Figure 3) was a plan for instruction that took students from concrete experience to reflective observation to abstract conceptualization to active experimentation. In each of the four steps, activities were structured to accommodate both right- and left-brain processing preferences.

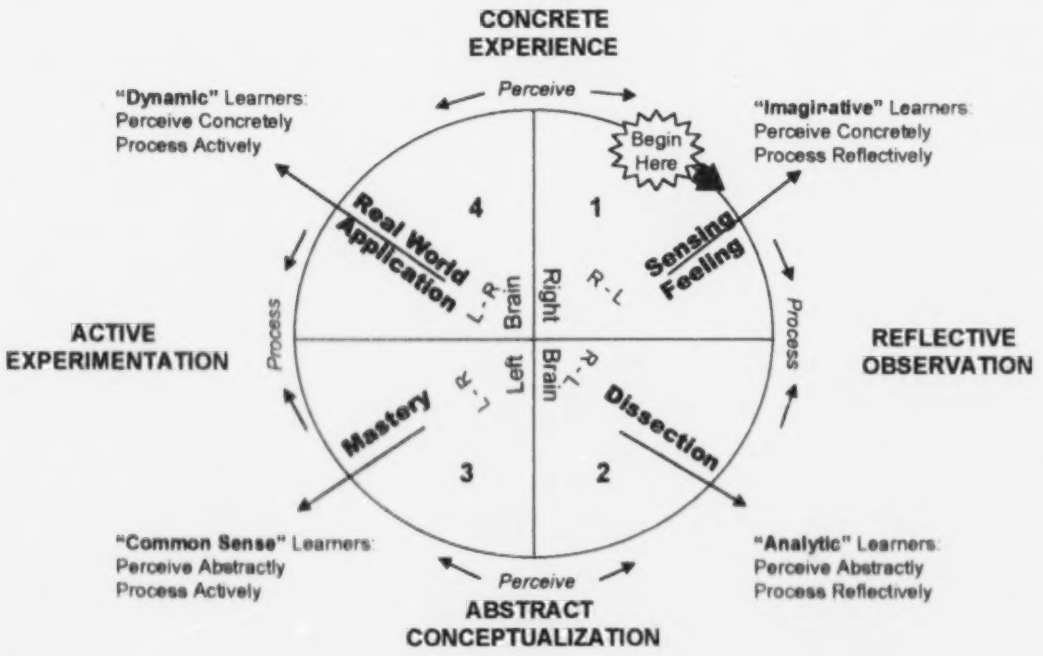

Figure 3

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MATCH OR FLEX

Several models presented here complement and build upon one another. However, there still remains considerable debate on the issue of matching the learner's style or altering it. Some researchers firmly believe that style should be developed and modified, such as Ramirez, Schmeck, Letteri. Some take the middle road, stating that learners should be taught through their strengths but encouraged to be flexible, such as Gregorc. On the other hand, there is extensive research by Rita Dunn and her colleagues that document enhanced achievement when student's learning-style preferences were matched rather than mismatched (Research on the Dunn and Dunn Model, 1997). Bernice McCarthy's model is basically a lesson plan model providing a sequence of instruction through which, as McCarthy states, "All students get a chance to shine 25% of the time" (p. 47). This seems to place McCarthy in the camp of those who believe students should flex (alter) their style. In view of the research on the Dunn and Dunn Model, the question arises - are students then in a mismatched condition 75% of the time?

W. C. Fields is reported to have said, "Style is everything!" Style clearly isn't "everything", but research in learning styles offers us a powerful tool to help students achieve to the fullest extent of their potential.

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